REMARKS/ARGUMENTS

Claims 2, 5-9, 11, 12, 15, 16, 18-24, 26, 27, and 29-36 are pending. Claims 2, 5-9, 11, 12, 15, 16, 18-24, 26, 27, and 29-36 were rejected under 35 U.S.C. 103(a) as unpatentable over WO 98/50219 to Johnstone in view of U.S. Patent No. 4,680,207 to Murray. Claims 2, 5-9, 11, 12, 15, and 21-24 were rejected as unpatentable over WO 94/04419 to Martin-Cocher et al. in view of Murray.

Applicant respectfully traverses the rejections. The claimed invention entails two aspects that the cited references fail to teach: (1) **biaxial** *cold* stretching of a film web *at atmospheric temperature*; and (2) partial relaxing of the film web in the longitudinal stretching direction by between *5 and 20% of the total stretched length*, along with partial relaxation in the transverse direction, wherein the longitudinal partial relaxation is **uniform** across the transverse cross-section of the web. Even if the references were to have been combined, the combination would not have taught both aspects of the claimed invention.

Johnstone discloses uniaxial prestretching of a plastics material film beyond its yield point, followed by partial relaxation of the film so as to retain between 20% and 80% of the elastic deformation. The total deformation of the film is made up of plastic deformation, immediately recoverable elastic deformation, and "memory" deformation that is recoverable over time. Therefore, when Johnstone discloses partial relaxation of the film to retain between 20% and 80% of the elastic deformation, that is not the same as partial relaxation by between 5% and 20% of the total stretched length. In fact, it is not even possible to mathematically relate the two concepts, and therefore it cannot be said that Johnstone's disclosure necessarily implies a partial relaxation as presently claimed.

Furthermore, nothing in Johnstone teaches the *uniform* longitudinal partial relaxation of the film web as claimed. Such uniform relaxation requires special but known processes, which are nowhere disclosed or suggested in Johnstone. Thus, Johnstone fails to disclose either of aspects (1) and (2) of the claimed invention noted above.

Murray likewise does not teach either aspect. With respect to aspect (1), Murray does disclose biaxial stretching of a film web, but this does not take place at cold, atmospheric temperature conditions. While Murray refers to "cold drawing", this must be understood in the context of that document as referring to the absence of external heating of the web during the drawing. In fact, as can be inferred from Murray's specific disclosures, the drawing takes place at temperatures well above normal atmospheric temperature levels. More particularly, Murray discloses stretching a film tube immediately after extrusion. The stretching in both transverse and machine directions occurs over the tapered mandrel **15** immediately after the film is extruded as molten thermoplastic resin (col. 8, lines 60-61). The cooling air ring **14** cools the film temperature to between 135° C and 150° C immediately before the cooling cylindrical mandrel **12** (col. 9, lines 6-8). The temperature of the mandrel **12** is said to be 85° C, with the purpose being to chill the film to a temperature below the crystalline melting point, i.e., below about 121° C. The film passing over the tapered stretching mandrel **15** therefore is generally below 121° C but it remains significantly hot and certainly could not be said to be at atmospheric temperature. Murray indicates that the temperature of the film prior to entry between the nip rolls **13** is rapidly reduced to about 60° C (col. 9, lines 27-28). Thus, upstream of the nip rolls **13** at the stretching mandrel **15** the film temperature is higher than 60° C. This is much hotter than "cold atmospheric temperature" as claimed.

Moreover, there is nothing in Murray or Johnstone that would have suggested their combination in such a way as to arrive at biaxial stretching at atmospheric temperature. Murray specifically teaches extruding a thermoplastic tube and immediately stretching it biaxially while still significantly hot. Applicant submits that even if Murray and Johnstone were to have been combined, the combination would have employed biaxial stretching while the film web is still hot, since Johnstone does not contain any disclosure suggesting that such biaxial stretching could or should be conducted at atmospheric temperature while still accomplishing the objectives of Johnstone. Additionally, neither Murray nor Johnstone teaches or suggests that gas transmissivity and/or UV degradation resistance of a film can be improved by the particular biaxial stretching and uniform partial relaxation as claimed.

Accordingly, Murray does not disclose aspect (1) of the claimed invention. Furthermore, Murray does not disclose uniform partial relaxation according to aspect (2).

With regard to Martin-Cocher, the Office Action acknowledged that it does not disclose aspect (2), i.e., uniform partial relaxation by between 5 and 20% of the total stretched length. Thus, the combination of Martin-Cocher and Murray fails to disclose at least aspect (2), since neither reference discloses it. Furthermore, Applicant submits that aspect (1) is also not disclosed or suggested by any combination of these references. As already noted, Murray specifically teaches extruding a thermoplastic tube and immediately stretching it biaxially while still significantly hot. Applicant submits that even if Murray and Martin-Cocher were to have been combined, the combination would have employed biaxial stretching while the film web is still hot, since Martin-Cocher does not contain any disclosure suggesting that such biaxial stretching could or should be conducted at atmospheric temperature while still accomplishing the objectives of Martin-Cocher. Additionally, neither Murray nor Martin-Cocher teaches or suggests that gas transmissivity and/or UV degradation resistance of a film can be improved by the particular biaxial stretching and uniform partial relaxation as claimed.

Therefore, it is submitted that even if Martin-Cocher and Murray were to have been combined, the combination still would not have provided either aspect (1) or aspect (2) of the claimed invention.

The claimed invention advances the state of the art by providing a method of forming a plastics material film web, and a film web product, wherein improvement is achieved in either or both of gas transmissivity and resistance to degradation from UV light radiation, by a particular combination of biaxial stretching at atmospheric temperature followed by uniform partial relaxation of the film web by 5 to 20% of the total stretched length. The cited references do not teach or suggest the method or product, nor do they recognize the benefits to UV light degradation resistance or gas transmissivity that can be achieved by the method.

For all of the above-noted reasons, it is respectfully submitted that the present claims are patentable over the cited references.

Conclusion

Based on the above amendments and remarks, Applicant submits the application is in condition for allowance. The Examiner is invited to telephone Applicant's undersigned representative if any further issues require resolution prior to allowance.

Respectfully submitted,

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